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ABSTRACT

A study investigated the decoding automaticity of elementary students when receiving rule-based instruction (as a process of applying syllable and structural analysis rules and limited phonics), and when receiving holistic instruction in a whole language program (exercises in listening, reading and writing, integrated with classroom instruction when possible). Twenty children in grades one, two, four, and five were selected on the basis of their stanine reading scores on the California Achievement Test and from results indicating average intelligence on the Test of Cognitive Skills. The Sucher Allred Informal Reading Inventory was administered and a comparison of the automaticity of decoding of the two samples was conducted. Results indicated no significant differences, though the mean scores of the experimental group receiving the rule-based instruction were higher than the mean scores of the control group. (Two tables of data are included and 14 references are attached. Appendixes contain a chart of logic for decoding using structural analysis and a summary of test results.) (Author/SR)

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DECODING ABILITIES OF ELEMENTARY STUDENTS RECEIVING RULE-BASED INSTRUCTION AND WHOLE LANGUAGE INSTRUCTION

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Presented in Partial Fulfillment of the
Requirements for the Master of Arts Degree
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ABSTRACT

This study was designed to investigate the decoding automaticity of elementary students when receiving rule-based instruction as a process of applying syllable and structural analysis rules and limited phonics, and when receiving holistic instruction in a whole language program. Twenty children in grades one, two, four, and five were selected on the basis of their stanine reading scores on the California Achievement Test and from results indicating average intelligence on the Test of Cognitive skills.

To analyze results, the Sucher Allred Informal Reading Inventory was administered and a comparison of the automaticity of decoding of the two samples was conducted. The results indicated no significant differences, however the mean scores of the experimental group receiving the rule-based instruction were higher than the mean scores of the control group.

ACKNOWLEDGEMENTS

I would like to extend my appreciation to my family for their support while I was writing this thesis.

I am delighted to arrive at the culmination of several years' work, and greatly saddened that Chuck has no more arrivals to make.

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Decoding is the primary stage of reading comprehension. The reader must possess the ability to decipher the printed word at a satisfactory rate so as not to impeded the overall comprehension of a complete thought, passage, or an entire text.

The teaching of phonics is included in the teaching of word attack skills, and is a very successful method for most primary grade children as researched by Groff and Seymour (1987). Several of the skills needed to acquire phonic analysis include auditory discrimination, blending and synthesis. A child with weak aural skills may have difficulty performing this. He may possess the potential to acquire excellent visual discrimination and structural analysis skills which would enable him to learn with less difficulty if instruction were presented in such a method incorporating structural analysis, syllabication and a limited number of phonics rules.

As implied by Duffy and Roehler (1987), prescribed skills should be presented as strategies. If the rule-based instruction is presented as a process of sequential elimination, the student can then transfer

this decoding process to any unknown word. Of utmost importance is the opportunity to practice these skills on unknown words. Hall and Cunningham (1988) state that although syllabication and accent rules are taught, there is little evidence that the rules are applied. The question of opportunity for practice must be asked. Samuels (1988) found phonics skills must have extended practice on unknown words in text.

As Newman and Church (1990) point out, the philosophy of whole language incorporates the teaching of analytical phonics with an emphasis on text, but does not provide specific skills lessons for the student who is weak in decoding skills. Rule-based instruction could be incorporated into a whole language program if justification can be verified. The effects of such an approach in comparison to that of whole language procedures has not been established in the literature.

Definitions

Rule-based instruction - Rules for the reader to follow in decoding unfamiliar words are mutually inclusive of structural analysis, syllabication rules, and some phonics rules.

Limited phonics rules - These rules are presented as an arbitrary process of elimination. The yardstick by which a decision is made on the correct vowel sound is, "Have I heard this word before?", i.e., the word 'guess.' Is it guess, guess, guess or guess? If the student chooses guess, write 'geese' and say that this is how geese is spelled, so it can't be that. The only choice of a word previously heard is 'guess.'

These rules include:

Phonics -

- one syllable words - when two vowels are together, try saying the name of the first vowel; it it's not a word that you've heard before, then try a short sound for

the first vowel, repeating the sequence for the second vowel.

- The final 'e' one letter away from the vowel will make the vowel say its name, i.e., hate, not hat.

- unless in the initial position, y and w are vowels.

Polysyllabic Roots -

- go to the first vowel and say its name
- initial a pronounced as / /, i.e., along.

Digraphs and Diphthongs

- try /ou/ pronounced as '<u>out</u>' first.
- try /ow/ pronounced as '<u>out</u>' or ōw, i.e., cow or snow.
- try /gh/ pronounced as silent or f.
- ce, ci, cy as /s/.
- ge, gi, gy as /j/.
- ti, ci pronounced as /sh/, i.e., spatial and special.
- tu pronounced as /ch/, i.e., statue.
- ch pronounced as /k/, i.e., chorus.

Hypothesis

To determine the effect of rule-based instruction versus whole language instruction, the following study was established.

The hypothesis was that there would be no difference in the decoding abilities of two samples of elementary school children when one was taught a process of rule-based instruction while the other was presented the same vocabulary in a whole language context.

Procedures

A small group population of students in grades one through five was sought to participate in this study. Therefore, the Spring 1990 California Achievement Test scores of the district were studied to select students in each grade with a stanine score of 1 to 5. Of those students currently in grades three to five, (1990-1991 School Year) the cognitive skills index score was used to further stratify the students so that all subjects were of average intelligence as measured on the Test of Cognitive Skills.

The final sample consisted of 20 students, all of whom came from a district classified as having a DGF of H (as per New Jersey State Department of Education District Grouping Factor for socio-economic status). One second grade student was classified as perceptually impaired. One first grade student and one second grade student were black, and the remaining subjects were caucasian.

Two samples of ten subjects were established by random assignment using a table of random numbers.

The experimental and control samples had an aggregate of ten subjects stratified as follows, according to grade as shown in Table I.

TABLE I

Grade assignment of random selections

Grade	Experimental Group	Control Group
1	5	5
2	3	3
4	1	1
5	1	1

Instruction was given for 30 minutes per day, two days per week in small group settings of two to four subjects per group, using the Harris Jacobsen Core List (1972).

Initial placement of the students in the HJCL list was one grade level below grade placement. Rule-based instruction was given as a process of sequential elimination with practice on unknown words. Whole language instruction was given as exercises in listening, reading and writing, integrated with classroom instruction when possible.

Each student was administered the Sucher Allred Informal Reading Inventory. To arrive at a raw score, the total number of correctly decoded words from independent level through and inclusive of frustration level were included.

Conclusions and Implications

The null hypothesis that there is no difference in the decoding abilities of elementary school children when taught a process of rule-based instruction or when presented in a whole language context was proven.

Using the Sucher Allred Informal Reading Inventory, the mean results of the samples (x and c) on decoding in list format were statistically compared using the t test to determine the significance of any differences between the samples, if any. The report of findings included miscue, nonpronunciation, and substitution.

As indicated by the results of the post-test as shown in Table II, there was no significant difference in the scores of the experimental group and the control group.

TABLE II

Mean, Standard Deviation and t of the Samples

Group	M	SD	t
x	30.30	10.96	.73
y	26.10	14.52	

As evidenced in Table II, the difference between the means (experimental group 30.3, control group 26.1) of 4.20 at 18 degrees of freedom demonstrates no significant difference.

As indicated by the table, the experimental group did have a higher mean score than the control group. Utilizing

statistical tests to determine the significance of the differences between the two approaches on the number of words correctly decoded, a t of .73 was computed, indicating that the differences could have resulted from chance.

The conclusion is that the rule-based instruction is not significantly better than whole language instruction in students acquiring automaticity in decoding as this was tested by this study.

Empirical observations demonstrated that the experimental group was using beginning strategies by scanning for a compound word, removing affixes, and changing the vowel sound when encountering an unknown word.

DECODING ABILITIES OF ELEMENTARY STUDENTS:

RELATED LITERATURE

In a review of related literature, authors reiterate the primary importance of decoding in order to allow the reader to comprehend the text. Ekwall (1976) reports on studies which illustrate the importance of acquiring a core of sight vocabulary words so that no word analysis skills are required when the student encounters them in print. Many high utility words are not phonetically regular, and don't lend themselves to phonic word attack. Hence, sight vocabulary instruction via the use of a core or basic sight word list may be most beneficial considering the need to reduce decoding while reading text, and the lack of evidence that the context setting of most service words is of value in helping the student with word identification.

Using the term 'syllabary' to define a method of teaching word identification skills, Tierney, et al. (1990) propose the use of the syllable as the unit of instruction and a strategy of comparison and a contrast of known word parts to unknown word parts. The rationale is that the segment of a syllable is seemingly a more natural unit of pronunciation than a phoneme,

which can become distorted when pronounced in isolation. The strategy includes scanning an unknown word for comparison with known elements, and contrasting unknown segments to be decoded through applying an ordered set of rules. This analogy-based decoding strategy may or may not be suitable for primary readers, but it is certainly suitable for intermediate to adult readers.

Cunningham (1975-76) also offers a process approach to decoding based on the premises that word parts are memorized, and word identification involves a search of the memory bank. Unknown words are segmented into units which are compared and contrasted with known words for identification. Cunningham has labeled this the synthesized theory of word identification, and has demonstrated success in a study investigating the use of the syllable as a means to improve the word recognition skills of second graders.

Advocated by White, et al. (1989) is the active use of a limited number of word part clues, and the emphasis on the application of affix knowledge to unfamiliar words. In this

particular study, nine prefixes and ten suffixes were evidenced for effectiveness when taught in a deliberate, systematic approach.

According to Duffy (1987), strategies are plans that readers can use for flexibility and adaptability as a skill in decoding. The objective is to teach students to develop thoughtful and conscious reasoning to arrive at the correct pronunciation of an unknown word. Duffy has determined that the teacher must bring four conditions to the instruction: provide situational practice, model the alternative pronunciations, model the thinking done when using the strategy, and interact responsively with students as they develop an understanding of how to use the skill strategically. This study does not report whether this was done as class instruction or as one on one instruction.

Studies investigating how students identify polysyllabic words they meet in print is a neglected and unanswered question, state Hall and Cunningham (1988). Although syllabication and accent rules are taught, there is little evidence that students

actually use these rules to decode words. They completed a study to gather descriptive data about readers' use of context and letter sound as a polysyllabic decoding strategy.

According to Samuels (1988) in a study on decoding and automaticity, students who were taught phonics skills in isolation will probably have difficulty transferring to text. Conversely, many students who are taught holistically will probably have difficulty with word recognition. In examining how to help poor readers become automatic at word recognition, Samuels determined that automaticity in decoding results from direct instruction in decoding skills and extended practice in reading materials.

Altwerger, et al. (1987) review two theoretical viewpoints: skills and whole language. These authors maintain that "holistic" instruction excludes phonics materials and basal series, stating that there are no essential component practices from a whole language viewpoint. Throughout this article, it is made clear what whole language is not: a reader may not be clear

on what whole language is in the eyes of these authors. Decoding skills instruction was not covered in this article.

In the classroom, French, et al. present whole language as a curriculum of literature enrichment following Bloom's hierarchy of thinking skills. The only reference to word recognition is an extension to a cereal box lesson: "how many words do you see on the box that you recognize?" The purpose of this article is to list practical ideas for classroom use.

Again, the literature about whole language does not reveal a concern for decoding skills. Harp (1988) authored an article stating a new orientation about skills in reading is required of teachers: holistic priorities of whole to part puts the decoding of words as the least important skill next to letter-sound relationships. He states that the child's progress should be process oriented rather than product (as in mastering a specific skill) oriented. For evaluation purposes, the author would like to see a greater reliance on miscue analysis (is this testing what is not taught?), and the

development of checklists for processes rather than for skills.

A very common-sense approach to utilizing a whole language philosophy is given by Fagan (1990). He states that, although many whole language teachers consider phonics a no-no, "whole" does not mean avoiding focus on various skills. It does mean that the unit of learning must always be understood within a meaningful framework.

In a commentary by Newman and Church (1990), the myths and realities of whole language instruction are presented. The myths take a variety of forms, but for this research project the concern is for the misconceptions about specific instructional decisions, particularly decoding skill instruction. The myth of interest is that you don't teach phonics in whole language. The reality is that the authors note that no one can read without taking into account the graphophonemic cues of written language. Whole language teachers do indeed teach phonics, but not as something separate from actual reading. One might question why you

would draw a student's attention to graphophonic cues after they've successfully figured out an unfamiliar word as suggested in this commentary.

Children don't acquire automaticity in decoding through osmosis. There must be direct instruction in decoding to ensure proficient comprehension.

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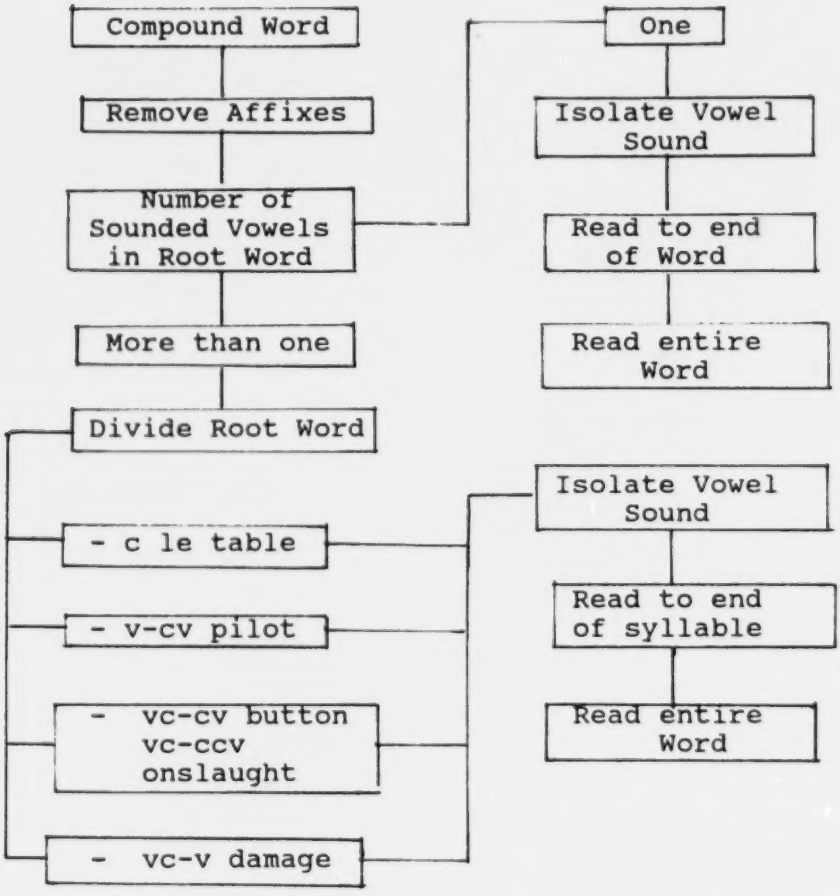
APPENDICES

Logic for Decoding Using Structural Analysis



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SUMMARY OF SUCHLER ALLRED TEST RESULTS

Number of Correct Words

X Sample

grade	student	primer	first	2^1	2^2	3^1	3^2	4	5	total
1	11	13	13	10						33
1	12	13	6							19
1	13	11	2							13
1	14	15	10							25
1	15	12	10							22
2	21		15	20	15					50
2	22		14	17	9					40
2	23		14	16	8					38
4	41			16	14					30
5	51							18	15	33

Y Sample

grade	student	primer	first	2^1	2^2	3^1	3^2	4	5	total
1	16	15	15	19						49
1	17	9								9
1	18	13	7							20
1	19	8								8
1	10	10								10
2	25	14	13	14						41
2	26	13	10							23
2	27		14	14						28
4	42					19	19			38
5	52					17	18			35